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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/607,796

06/27/2003

Ronald D. Javor

ITL.1808US (P16081)

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47795 7590 08/18/2008
TROP, PRUNER & HU, P.C.
1616 S. VOSS RD., SITE 750
HOUSTON, TX 77057-2631

EXAMINER

LU, ZHIYU

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

08/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/607,796	Applicant(s) JAVOR ET AL.	
	Examiner ZHIYU LU	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-12,14 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-12,14 and 16-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 04/17/2008 have been fully considered but they are not persuasive.

Regarding the rejections, applicants argued Buternowsky and Ishizaki do not teach “being an omni-directional radio frequency antenna having a non-directive radiation pattern and said second antenna is a radio frequency directed antenna having a directive radio pattern” because neither of the references teach non-directive and directive radiation patterns. They are both either directive or both non-directive because the radiation patterns are basically the same just in different planes.

However, the Examiner does not agree. There are no limitations in claims on using which plane(s) to consider radiation pattern for the antennas. Yet, Ishizaki teaches a linear antenna having a non-directive radiation pattern (right side radiation pattern of Fig. 3a) and a coil-shaped antenna having a directive radiation pattern (left side radiation pattern of Fig. 3b, Fig. 4a). So, by interpretation on claim language, Ishizaki does teach the argued limitation, where two different antennas have two different radiation patterns. Therefore, Buternowsky and Ishizaki do teach the claims.

Thus, the rejections are proper and maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 6-11, 14 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buternowsky et al. (US Patent#6088407) in view of Ishizaki et al. (US Patent#5274388).

Regarding claim 1, Buternowsky et al. teach an apparatus, comprising:

a first antenna to receive a signal from a source (122 of Fig. 2);
a second antenna to receive a signal from the same source as the first antenna, said first and second antennas being radio frequency antennas (122 of Fig. 2); and
a device coupled to said first and second antennas to use the signals from the same source as detected by the first and second antennas to reduce interference (column 2 lines 43-57).

But, Buternowsky et al. do not expressly disclose said first antenna being an omni-directional radio frequency antenna having a non-directive radiation pattern and said second antenna is a radio frequency directive antenna having a directive radiation pattern.

Ishizaki et al. teach an apparatus with a second antenna having a radiation pattern different than a radiation pattern of a first antenna, where said first antenna being an omni-directional radio frequency antenna having a non-directive radiation pattern (right pattern of Fig. 3a) and said second antenna is a radio frequency directive antenna having a directive radiation pattern (left pattern of Fig. 3b, Fig. 4a, column 3 lines 47-53).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using two different types of antenna taught by Ishizaki et al. into the apparatus of Buternowsky et al., in order to prevent receiving strength from being degraded due to change in application environment.

Regarding claim 10, Buternowsky et al. and Ishizaki et al. teach a system comprising: a wireless wide area network device (abstract of Ishizaki et al.), comprising limitations as explained in response to claim 1 above.

Regarding claim 14, Buternowsky et al. and Ishizaki et al. teach a method as explained in response to claim 1 above.

Regarding claim 6, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 1.

Butternowsky et al. teach wherein said device includes a first receiver that is a direct conversion receiver and a second receiver that is a direct conversion receiver (102s of Fig. 1).

Regarding claim 7, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 6.

Buternowsky et al. teach a baseband processor coupled to the first receiver and the second receiver (column 2 lines 52-55, column 3 lines 36-41).

Regarding claim 8, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 1.

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Butternowsky et al., and Ishizaki et al. teach the first antenna receives a first radio frequency signal and the second antenna receives a second radio frequency signal that is not correlated to the first signal and further comprising a baseband logic circuit adapted to process the first radio frequency signal and the second radio frequency signal to provide interference detection and cancellation (column 2 lines 27-42, column 6 lines 36-59 of Butternowsky et al.).

Regarding claim 9, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 6.

Butternowsky et al. teach the first receiver is adapted to down convert a first signal from the first antenna and wherein the second receiver is adapted to down convert a second signal from the second antenna (column 3 lines 3-11).

Regarding claim 11, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 1.

Ishizaki et al. teach the wireless wide area network device is a cellular telephone (column 1 lines 6-7).

Regarding claim 16, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 14.

Ishizaki et al. teach receiving the first signal from an omni-directional antenna having a non-directive radiation pattern (1 of Fig. 1).

Regarding claims 3 and 17, Butternowsky et al. and Ishizaki et al. teach the limitations of claims 1 and 16.

Ishizaki et al. teach the first antenna is a whip antenna (1 of Fig. 1).

3. Claims 4, 12 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butternowsky et al. (US Patent#6088407) in view of Ishizaki et al. (US Patent#5274388) and Narayanaswamy et al. (US Patent#5905467).

Regarding claim 4, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 1.

But, Butternowsky et al. and Ishizaki et al. do not expressly disclose the second antenna is a microstrip patch antenna.

Narayanaswamy et al. teach a portable device having its second antenna being a microstrip patch antenna (column 2 lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate having second antenna being a microstrip patch antenna taught by Narayanaswamy et al. into the modified apparatus of Butternowsky et al. and Ishizaki et al., in order to provide low-cost antenna with minimizing surface space usage.

Regarding claim 12, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 11.

But, Butternowsky et al. and Ishizaki et al. do not expressly disclose at least a portion of the first antenna is external to a housing of the cellular telephone and wherein the second antenna is internal to the housing of the cellular telephone.

Narayanaswamy et al. teaches at least a portion of the first antenna is external to a housing of the cellular telephone (column 3 lines 10-19) and wherein the second antenna is internal to the

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housing of the cellular telephone (column 3 lines 20-27), where the two are obvious to one of ordinary skill in the art to combine into one embodiment.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate hiding second antenna in the housing and having an external traditional antenna as the first antenna taught by Narayanaswamy et al. into the modified system of Butternowsky et al. and Ishizaki et al., in order provide antennas with minimizing surface space usage.

Regarding claim 18, Butternowsky et al. and Ishizaki et al. teach the limitation of claim 14.

But, Butternowsky et al. and Ishizaki et al. do not expressly disclose receiving the second signal from a directive antenna having a directive radiation pattern.

Narayanaswamy et al. teach a method of receiving a second signal from a directive antenna having a directive radiation pattern (column 2 lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate using directive antenna taught by Narayanaswamy et al. into the modified method of Butternowsky et al. and Ishizaki et al., in order to provide directive antenna characteristic with minimizing surface space usage.

Regarding claim 19, Butternowsky et al., Ishizaki et al., and Narayanaswamy et al. teach the limitation of claim 18.

Narayanaswamy et al. teaches the directive antenna is a microstrip patch antenna (column 2 lines 1-5).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZHIYU LU whose telephone number is (571)272-2837. The examiner can normally be reached on Weekdays: 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. L./
Examiner, Art Unit 2618

/Nay A. Maung/
Supervisory Patent Examiner, Art Unit
2618

Zhiyu Lu
August 4, 2008